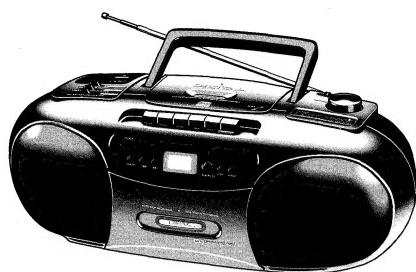


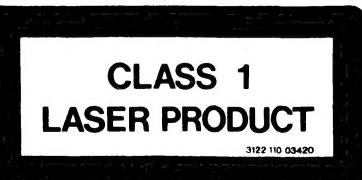
**Service
Service
Service**



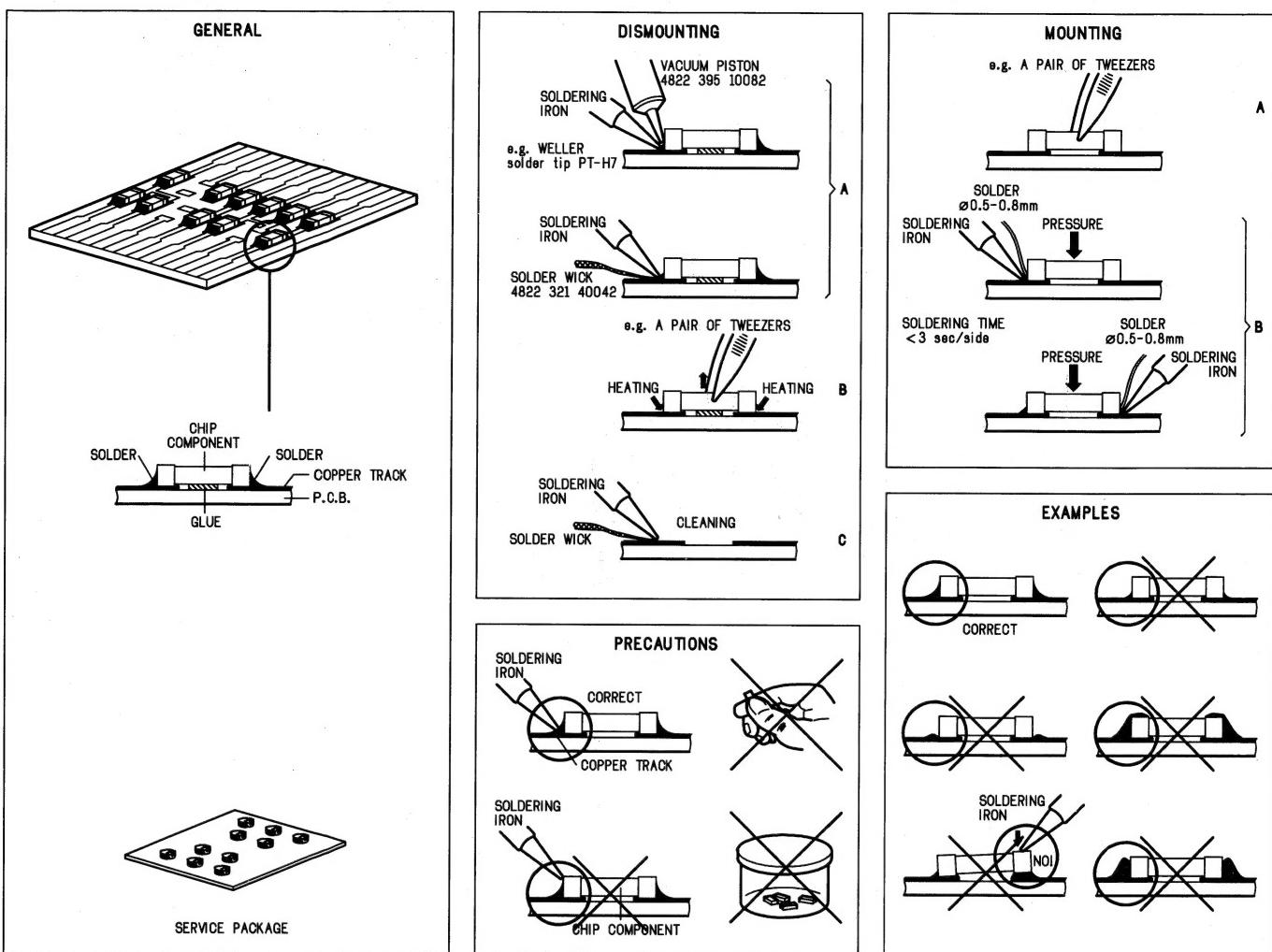
Service Manual

**COMPACT
disc
DIGITAL AUDIO**

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Connections and controls	2
Specifications	2
Block Diagram	3
Wiring Diagram	4
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HANDLING CHIP COMPONENTS



(GB) WARNING

All ICs and many other semiconductors are susceptible to electrostatic discharges (ESD). Careless handling during repair can reduce life drastically.

When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools at this potential.

(F) ATTENTION

Tous les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourtée par le fait qu'aucune précaution n'est prise à leur manipulation.

Lors de réparations, s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfile le bracelet servi d'une résistance de sécurité.

Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.

(GB)

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

(D)

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

(S) Varning !

Osynlig laserstrålning när apparaten är öppnad och spärren är urkopplad. Beträkta ej strålen.

(F)

"Pour votre sécurité, ces documents doivent être utilisés par des spécialistes agréés, seuls habilités à réparer votre appareil en panne".

ESD



(D) WARNUNG

Alle IC's und viele andere Halbleiter sind empfindlich gegenüber elektrostatischen Entladungen (ESD). Unsorgfältige Behandlung im Reparaturfall kann die Lebensdauer drastisch reduzieren.

Sorgen Sie dafür, daß Sie im Reparaturfall über ein Pulsschaltungsband mit Widerstand mit dem Massepotential des Gerätes verbunden sind.

Halten Sie Bauteile und Hilfsmittel ebenfalls auf diesem Potential.

(I)

Le norme di sicurezza esigono che l'apparecchio venga rimesso nelle condizioni originali e che siano utilizzati i pezzi di ricambio identici a quelli specificati.

(F)

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de recharge identiques à celles spécifiées.

(DK) Advarsel !

Usynlig laserstrålning ved åbning når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

(NL)

Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat u tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

(I) AVVERTIMENTO

Tutti IC e parecchi semi-conduttori sono sensibili alle scariche statiche (ESD). La loro longevità potrebbe essere fortemente ridotta in caso di non osservazione della più grande cautela alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell'apparecchio tramite un bracciale a resistenza. Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

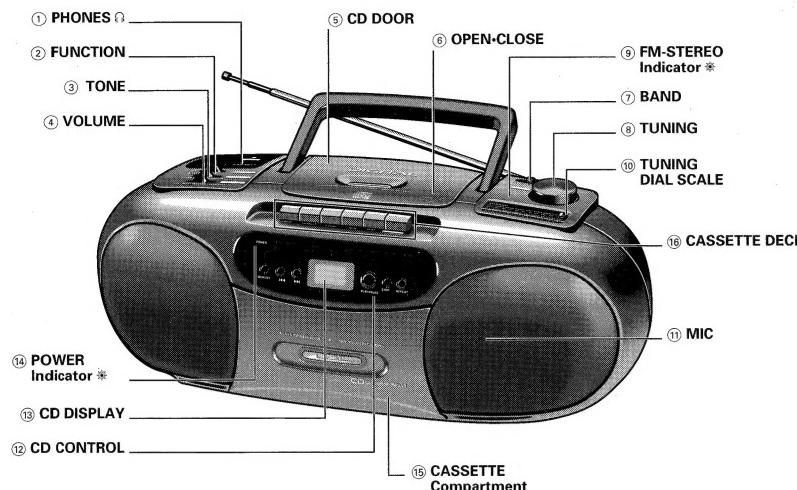
(NL)

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde, worden toegepast.

(SF) Varoitus !

Avatussa laitteessa ja suojalukituksen ohittaa olet alittiin näkymättömälle laserisäteilylle. Älä katso sääteeeseen !

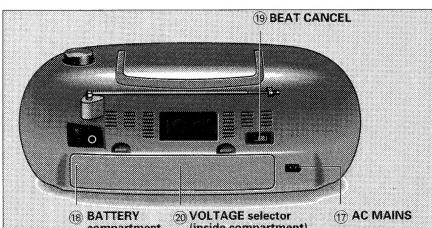
CONNECTIONS AND CONTROLS



TOP AND FRONT PANEL

- ① **PHONES** stereo headphone outlet
- ② **Function** switch
 - **CD**: To switch to CD mode/power on
 - **TAPE**: to switch to Tape mode/power off
 - **RADIO**: to switch to Radio mode/power on
- ③ **TONE** control
- ④ **VOLUME** control - to adjust the volume level.
- ⑤ **CD Door**
- ⑥ **OPEN-CLOSE** - to open the CD door
- ⑦ **BAND** switch
 - To select between MW(AM), FM stereo and FM mono
- ⑧ **TUNING** control - to tune to a radio stations
- ⑨ **FM STEREO Indicator *** control - Lights up when receiving on FM stereo stations
- ⑩ **TUNING DIAL SCALE**
- ⑪ **BUILT-IN MIC** - Under the speaker grill
- ⑫ **CD buttons**
 - ▶ II **PLAY/PAUSE** - To start and interrupt playback
 - **STOP** button - To stop playback
 - REPEAT** - To repeat one/all tracks
 - ◀◀ / ▶▶ - To skip and search backward / forward
 - PROG** - To program the track numbers in the memory.
- ⑬ **CD DISPLAY** - To indicate what function the unit is performing
- ▶ **PLAY**
- ▶ **flashing**: PAUSE

BACK PANEL



- ⑯ **AC MAINS** - socket for mains lead
- ⑰ **BATTERIES Compartment**
- ⑲ **BEAT CANCEL** Switch - For eliminating possible whistle tones during AM recordings
- ⑳ **VOLTAGE** selector (*not all versions*)

SPECIFICATIONS

GENERAL

Mains voltage	-/00 : 230V
Mains frequency	-/17 : 120V
	-/00 : 50Hz
	-/17 : 50/60Hz
Battery	10.5V (R20 x 7)
Power consumption	35W
Dimension (W x H x D)	440 x 160 x 220mm
Weight	3Kg

COMPACT DISC

Frequency response	± 3dB : 63 - 14kHz
Signal/hiss ratio	> 62dB
Distortion	< 1%
Channel difference	< 3dB
Channel crosstalk	> 36dB
Laser wavelength	780 ± 20nm
Laser light power	< 0.3mW

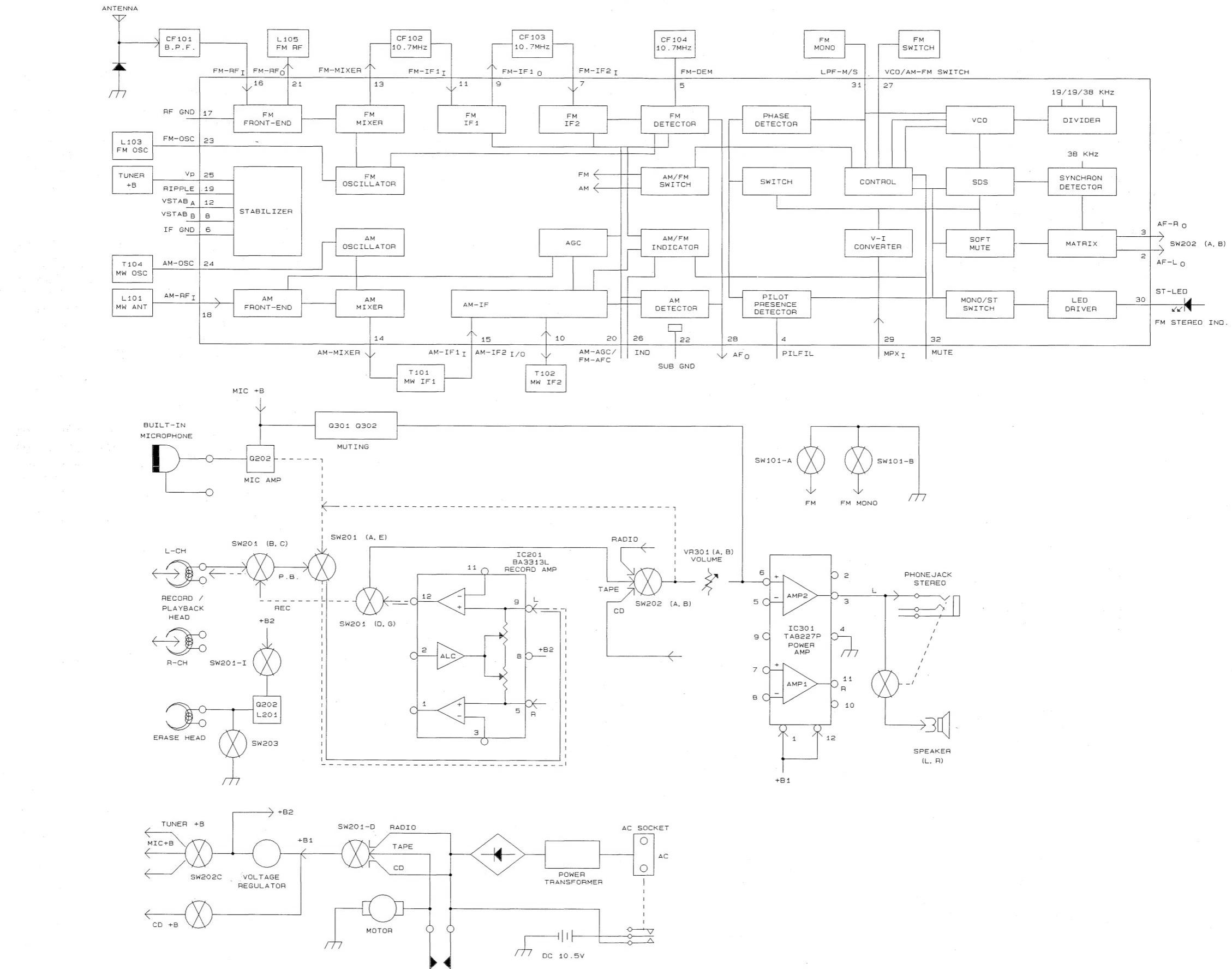
TUNER - FM section

Tuning range	: 87.25 - 108.35MHz
IF frequency	: 10.7MHz
Sensitivity	: < 22dBf at 26dB S/N
Selectivity	: > 20dB at 600kHz B.W.
IF rejection	: > 60dB
Image rejection	: > 26dB
AM suppression	: > 23dB
Stereo separation	1kHz : > 20dB

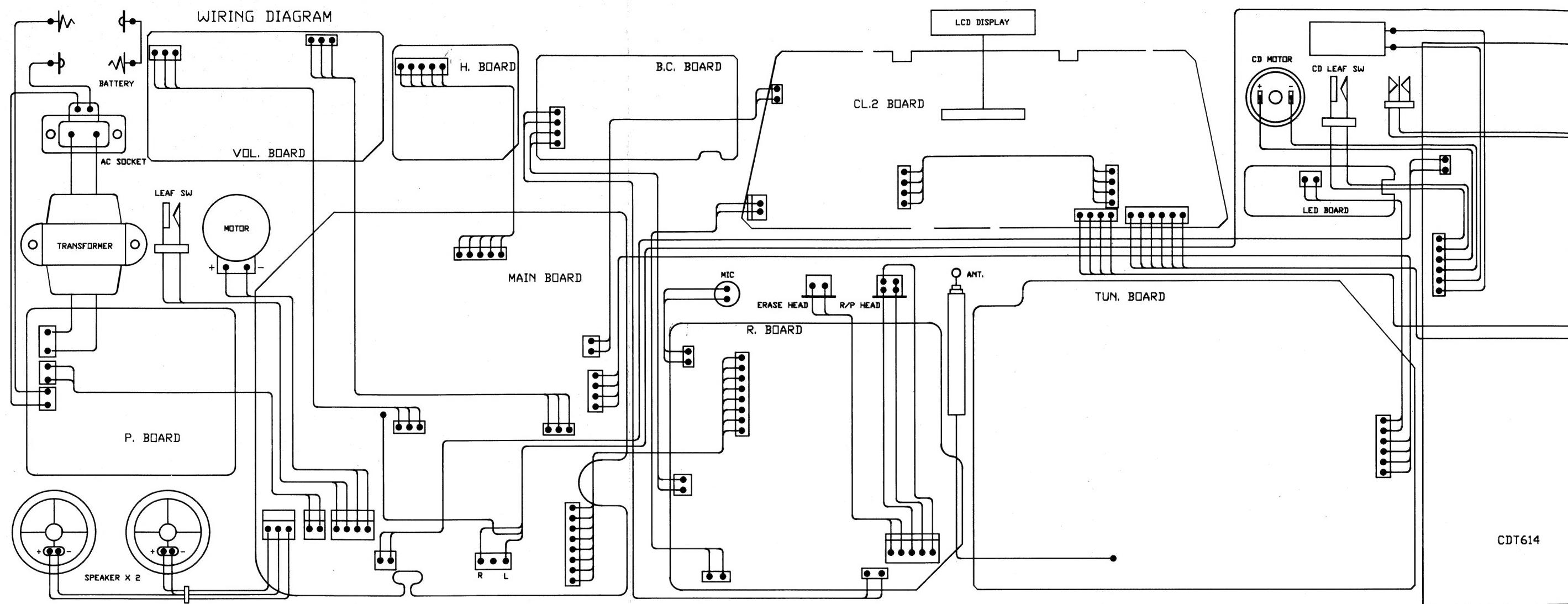
TUNER - AM section

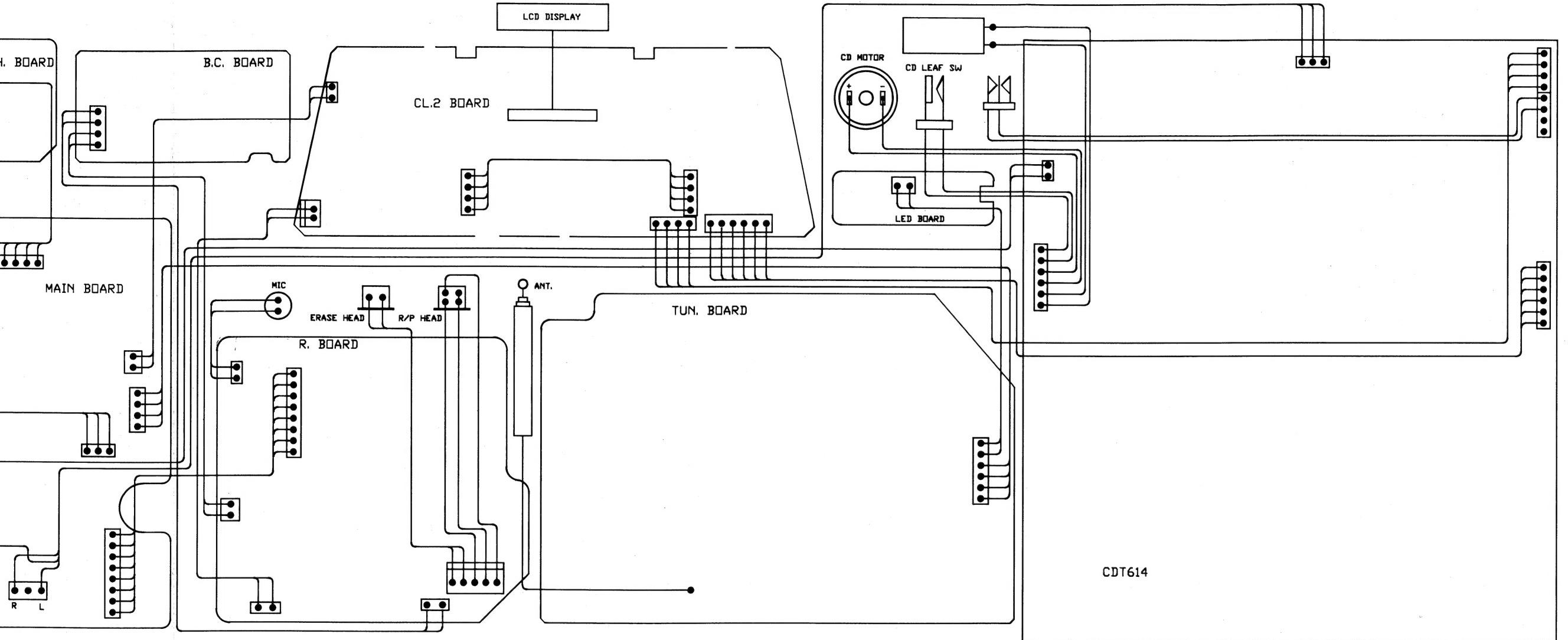
Tuning range	MW : 520 - 1620kHz
	-/17 AM : 520 - 1700kHz
IF frequency	: 468 ± 3kHz
Sensitivity	MW : < 2000µV/m 26dB S/N
Selectivity	MW : > 23dB
IF rejection	MW : > 34dB
Image rejection	MW : > 36dB

BLOCK DIAGRAM



WIRING DIAGRAM





CIRCUIT DIAGRAM

RADIO ALIGNMENT

AM IF						
AM or MW	468KHz		min.	T101 T102		1
AM RF						
MW *	516.5KHz		max.	T104		1
	+ 1631.5KHz		min.	TC4		1
	600KHz			L101		1
	1400KHz			CT3		1
FM RF						
FM #	87.35MHz		max.	L105		1
	108.35MHz		min.	TC2		1
	90MHz			L2		1
	106MHz			CT1		1

* Mod. 1KHz 30%

10nF + 15E

+ 1710KHz for -/17 version

Repeat

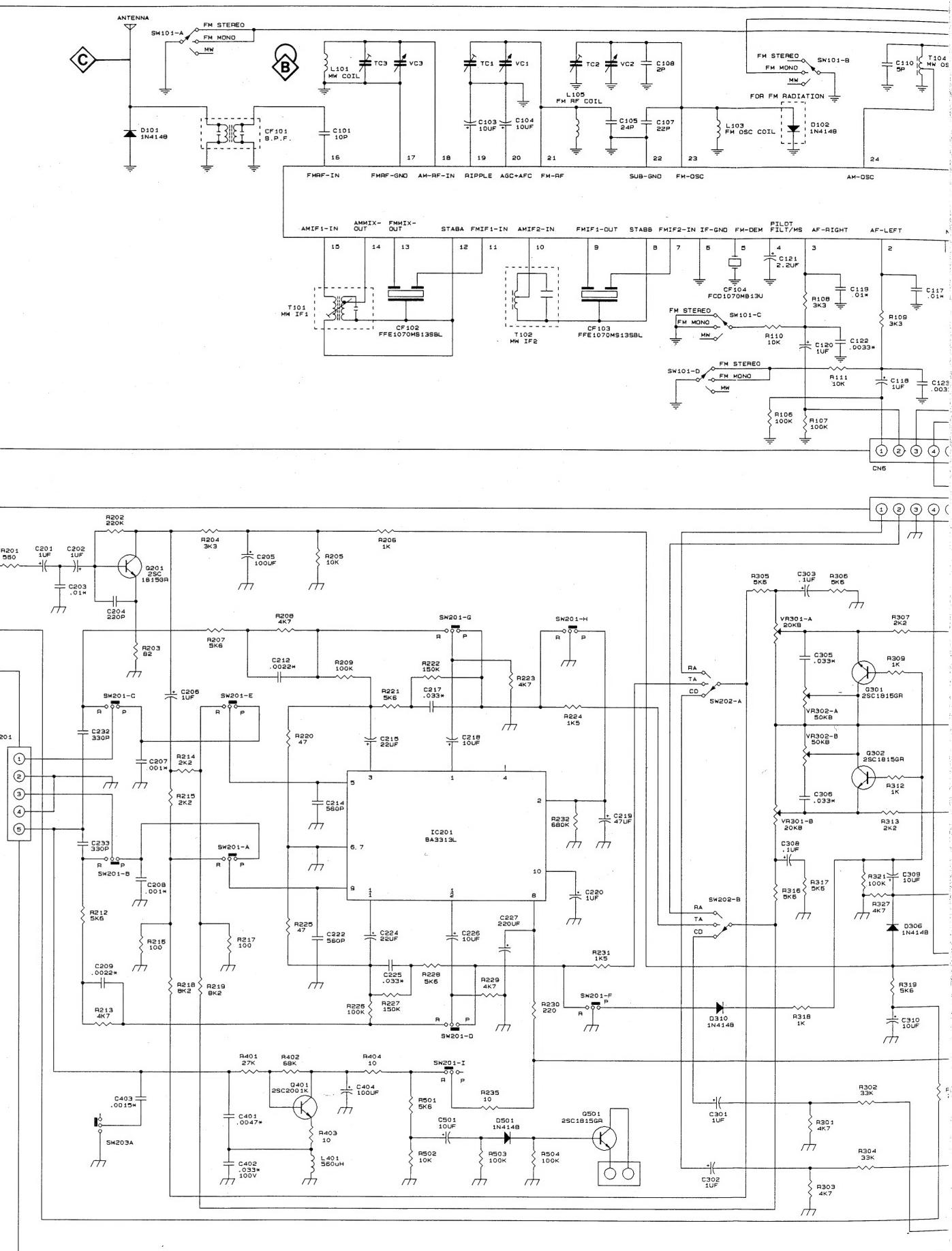
CASSETTE ADJUSTMENT

Adjustment	Cassette	SK...	Tape Deck	Measure on	Read on	Adjust with	Adjust to
Head Azimuth	SBC420*	8KHz	Tape	Play	H/P Jack	MV Meter	Left screw of R/P head max. L = R
Tape speed wow & flutter	SBC420*	3150Hz	Tape	Play	H/P Jack	Wow & flutter meter	Preset VR in motor **a

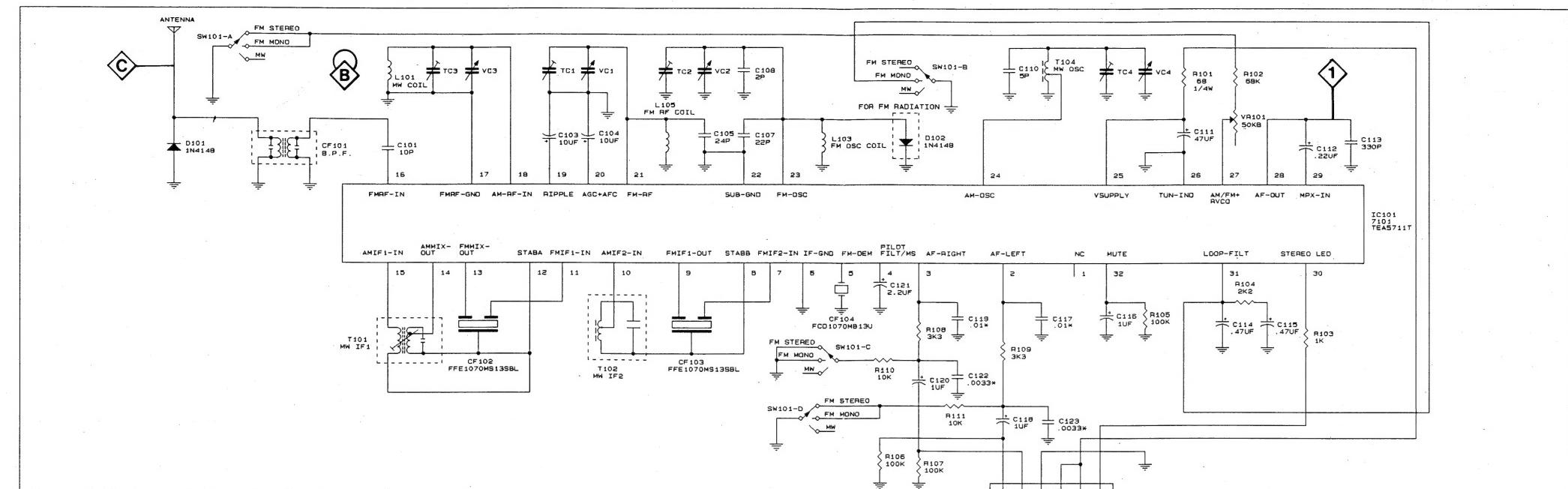
* SBC420 : 4822 397 30071

**a The maximum permissible speed deviation is $\pm 3\%$.

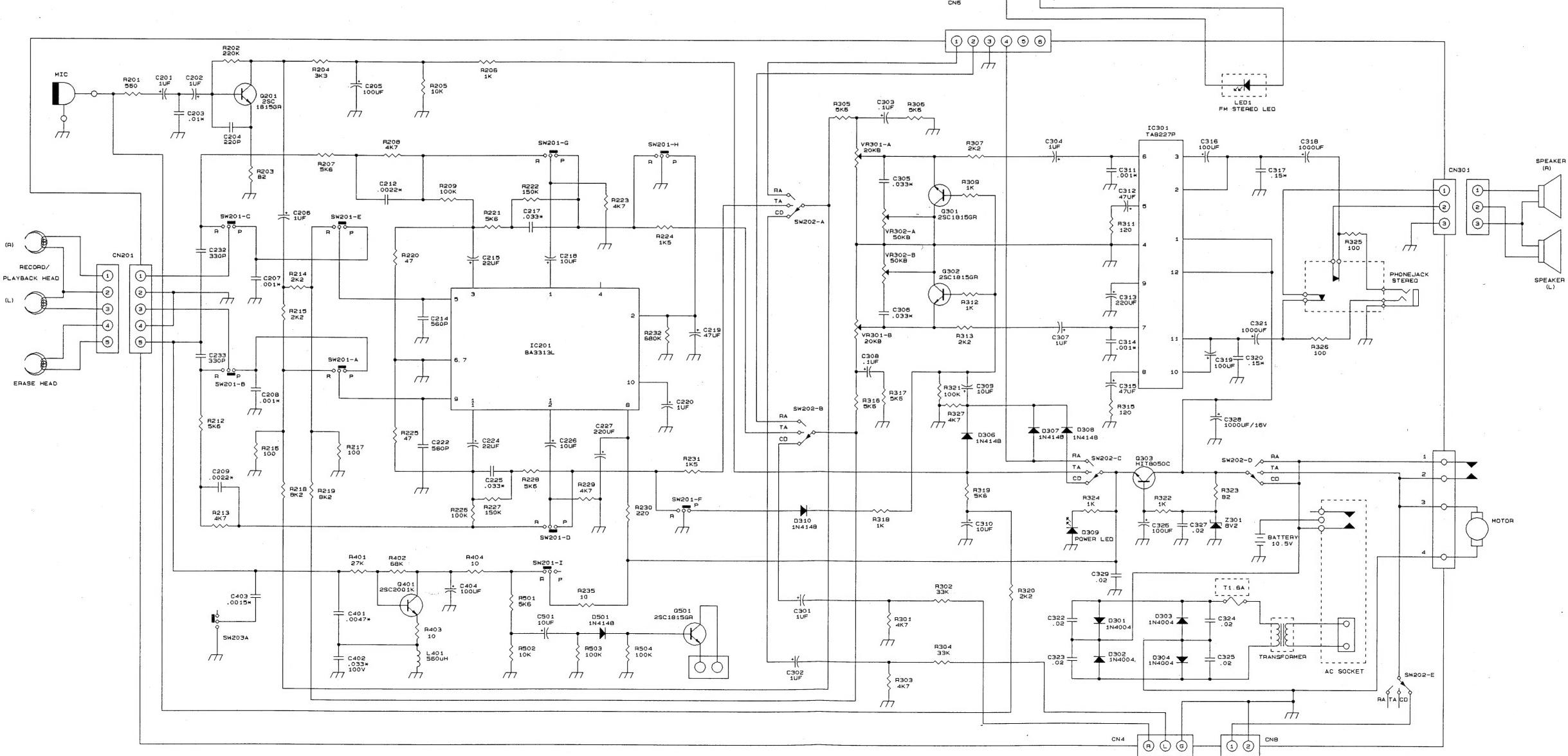
Moreover, the wow and flutter value can be read.



CIRCUIT DIAGRAM

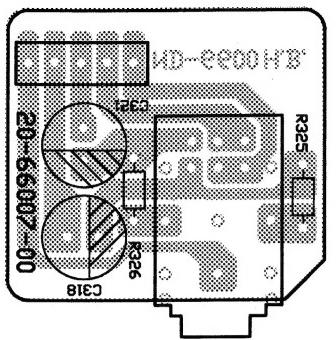


at

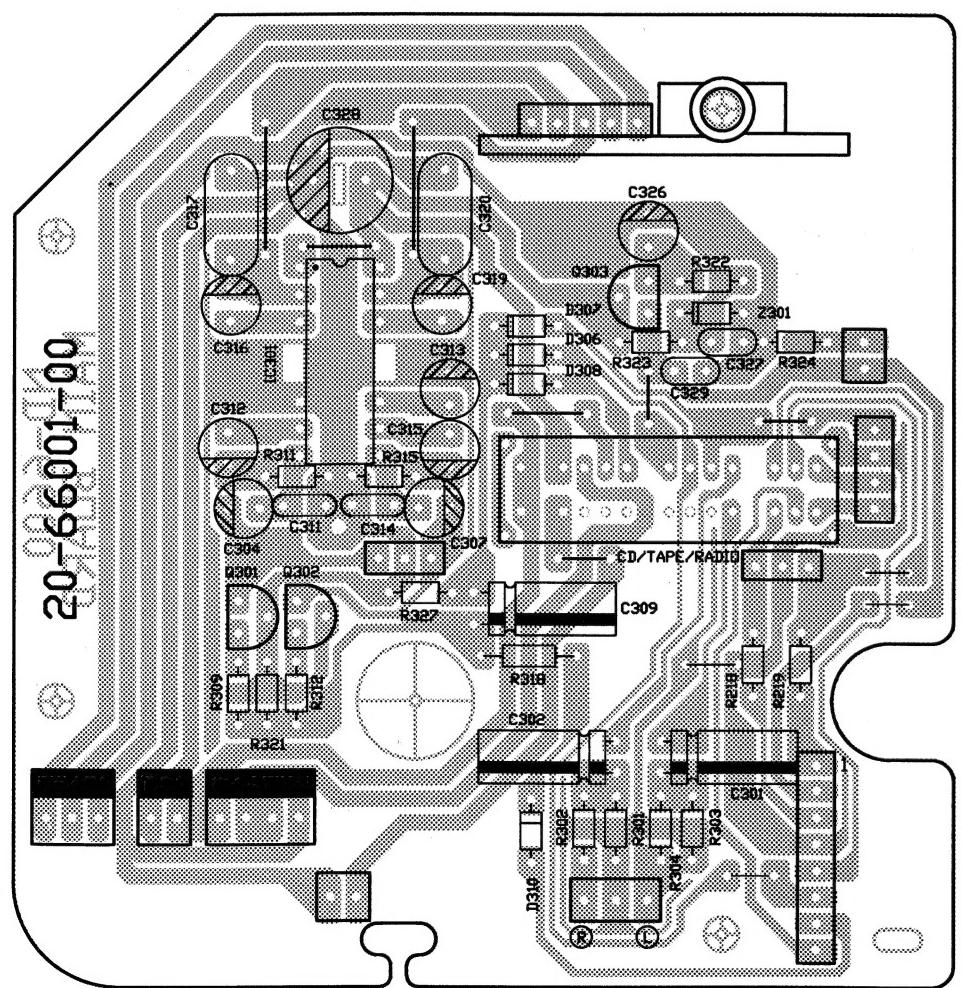
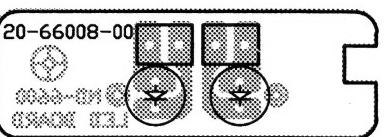


LAYOUT DIAGRAM

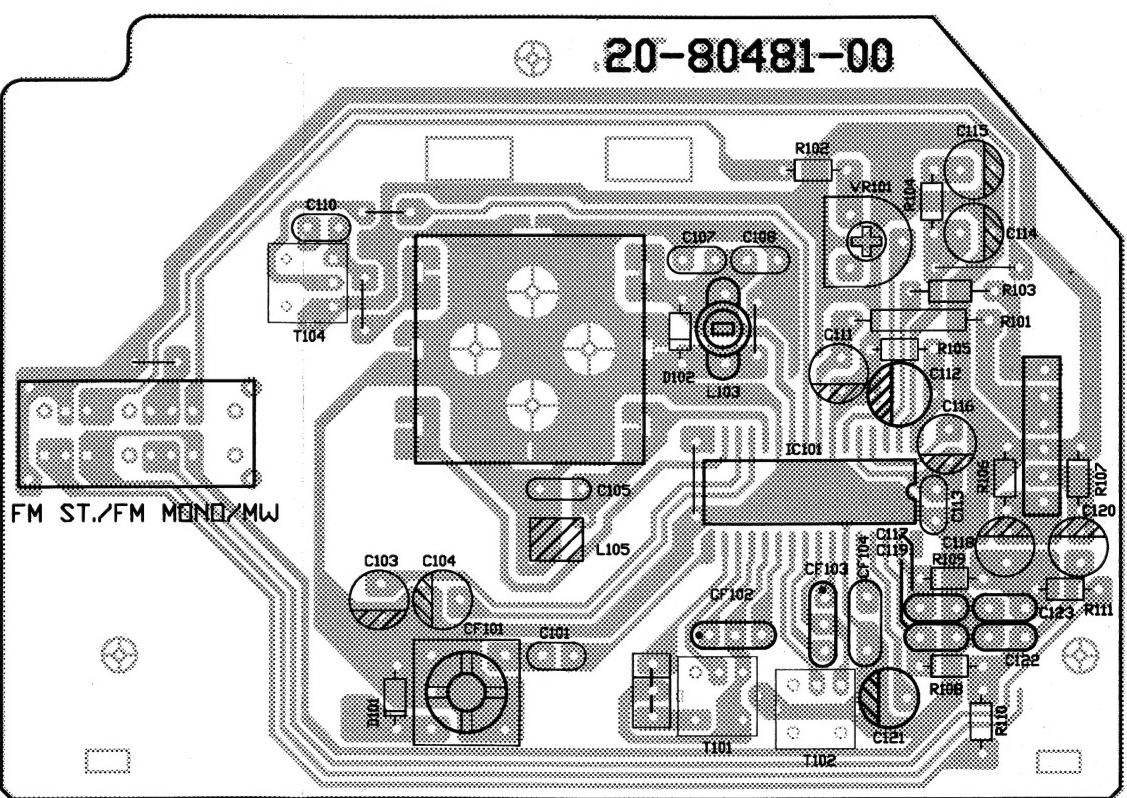
HEADPHONE BOARD



LED BOARD



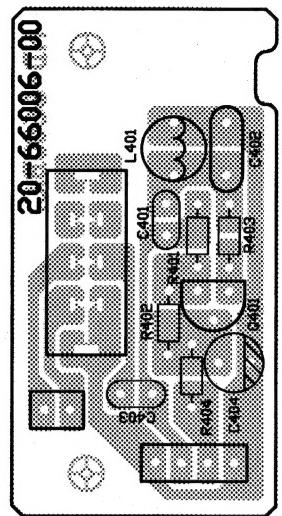
TUNER BOARD



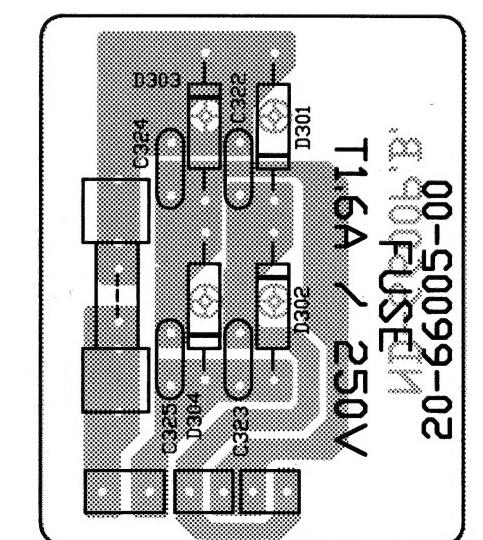
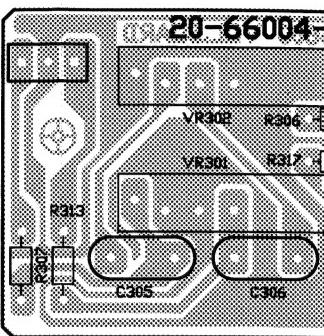
VOLTAGE CHART

IC 101		TEA5711T					
PIN	FM	PIN	FM	PIN	AM	PIN	AM
1	NIL	17	GND	1	NIL	17	GND
2	0.5	18	0	2	0.66	18	0
3	0.5	19	2.09	3	0.66	19	2.1
4	1	20	0.43	4	1	20	0.14
5	1.02	21	0	5	0.02	21	0
6	GND	22	GND	6	GND	22	GND
7	0.74	23	0	7	1	23	0
8	1.41	24	0	8	1.45	24	0
9	0.67	25	6.58	9	0.94	25	6.76
10	1.41	26	GND	10	1.45	26	GND
11	0.69	27	0.99	11	0.96	27	1.12
12	0.39	28	0.6	12	1.42	28	0.82
13	1.03	29	1.23	13	0	29	1.24
14	1.39	30	6.23	14	1.42	30	6.31
15	1.39	31	0	15	1.42	31	0.15
16	0.71	32	0.76	16	0.02	32	0.7

BEAT CUT



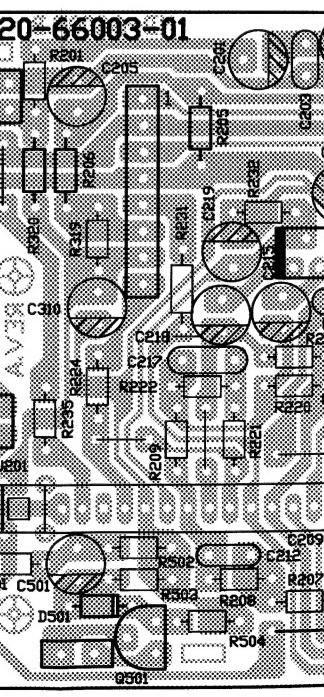
VOLUME BOARD



MAIN BOARD

POWER BOARD

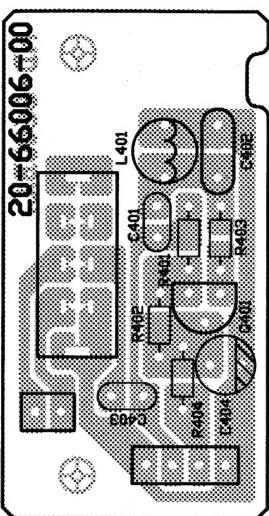
RECORD BOARD



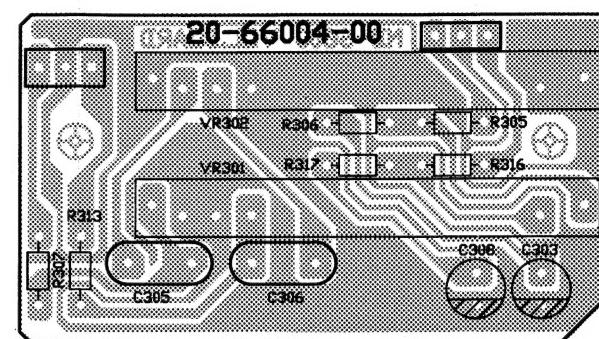
VOLTAGE CHART

IC 101		TEA5711T					
PIN	FM	PIN	FM	PIN	AM	PIN	AM
1	NIL	17	GND	1	NIL	17	GND
2	0.5	18	0	2	0.66	18	0
3	0.5	19	2.09	3	0.66	19	2.1
4	1	20	0.43	4	1	20	0.14
5	1.02	21	0	5	0.02	21	0
6	GND	22	GND	6	GND	22	GND
7	0.74	23	0	7	1	23	0
8	1.41	24	0	8	1.45	24	0
9	0.67	25	6.58	9	0.94	25	6.76
10	1.41	26	GND	10	1.45	26	GND
11	0.69	27	0.99	11	0.96	27	1.12
12	0.39	28	0.6	12	1.42	28	0.82
13	1.03	29	1.23	13	0	29	1.24
14	1.39	30	6.23	14	1.42	30	6.31
15	1.39	31	0	15	1.42	31	0.15
16	0.71	32	0.76	16	0.02	32	0.7

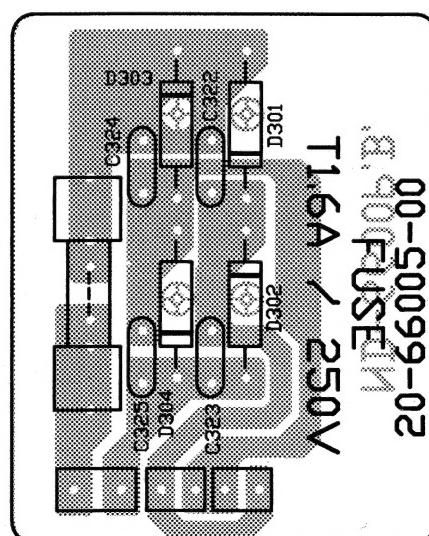
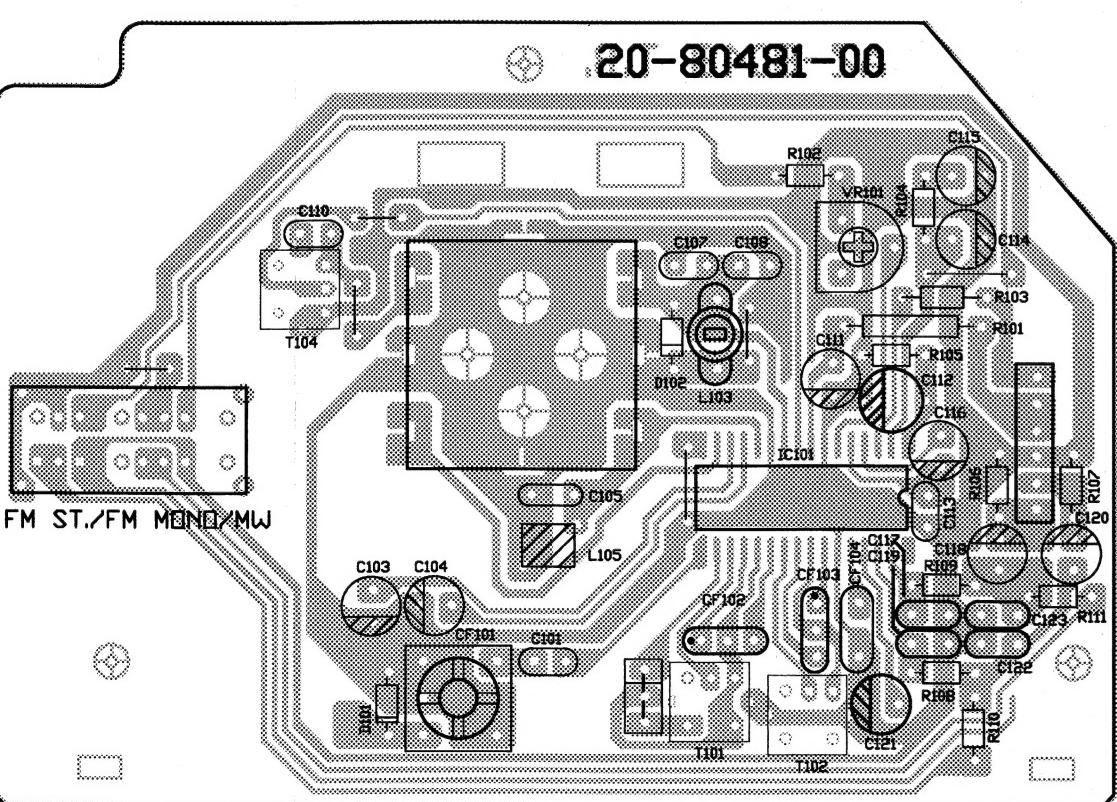
BEAT CUT



VOLUME BOARD

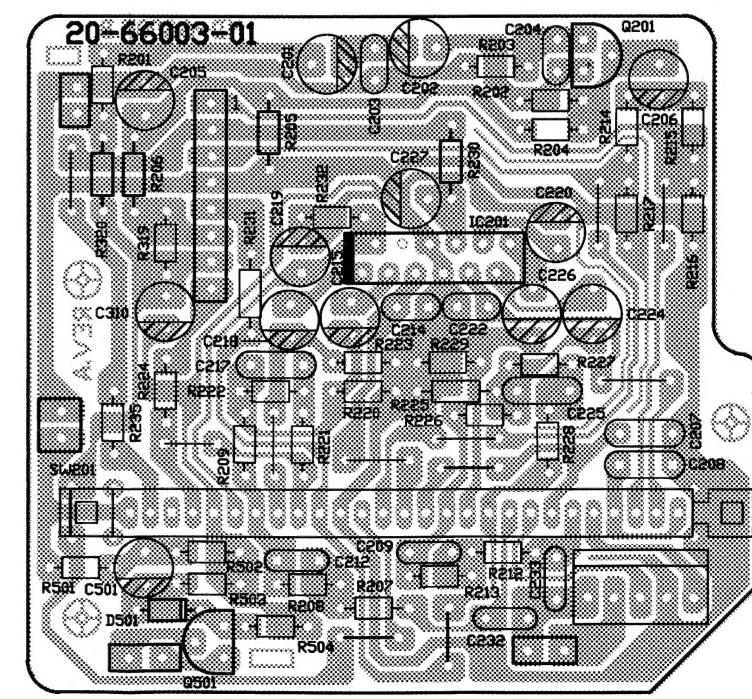


IC103	
PIN	VOLT
1	13.25
2	6.95
3	12.84
4	7.03
5	0.59
6	6.2m
7	6.2m
8	0.59
9	GND
10	12.84
11	6.95
12	13.25



TUNER BOARD

POWER BOARD



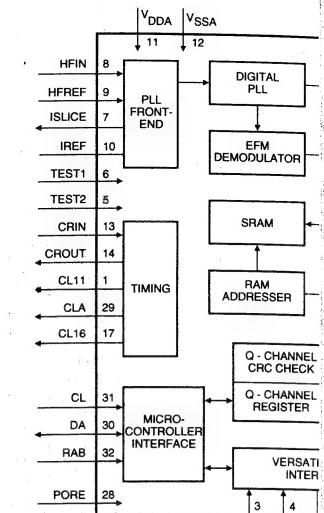
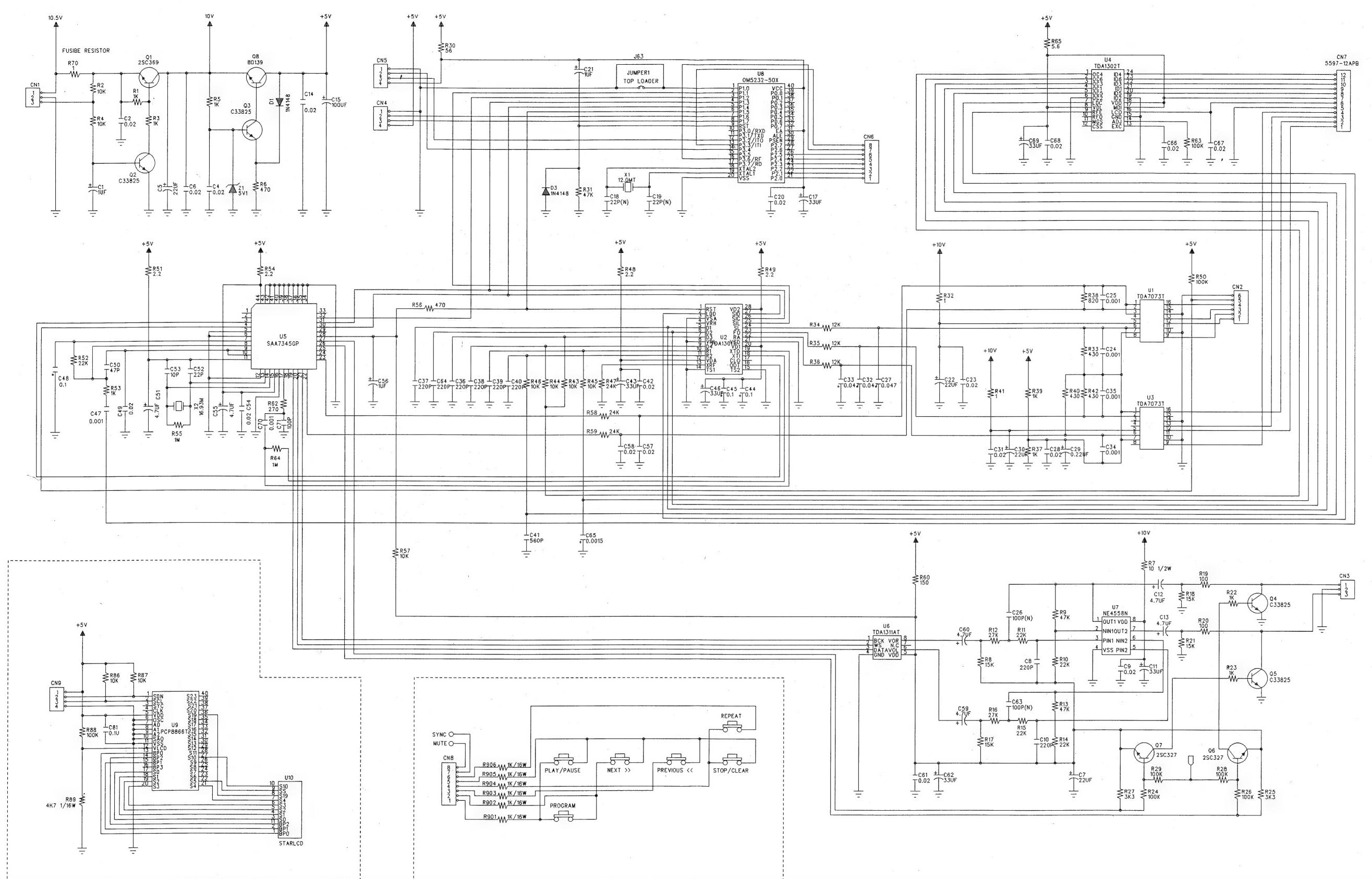
RECORD BOARD

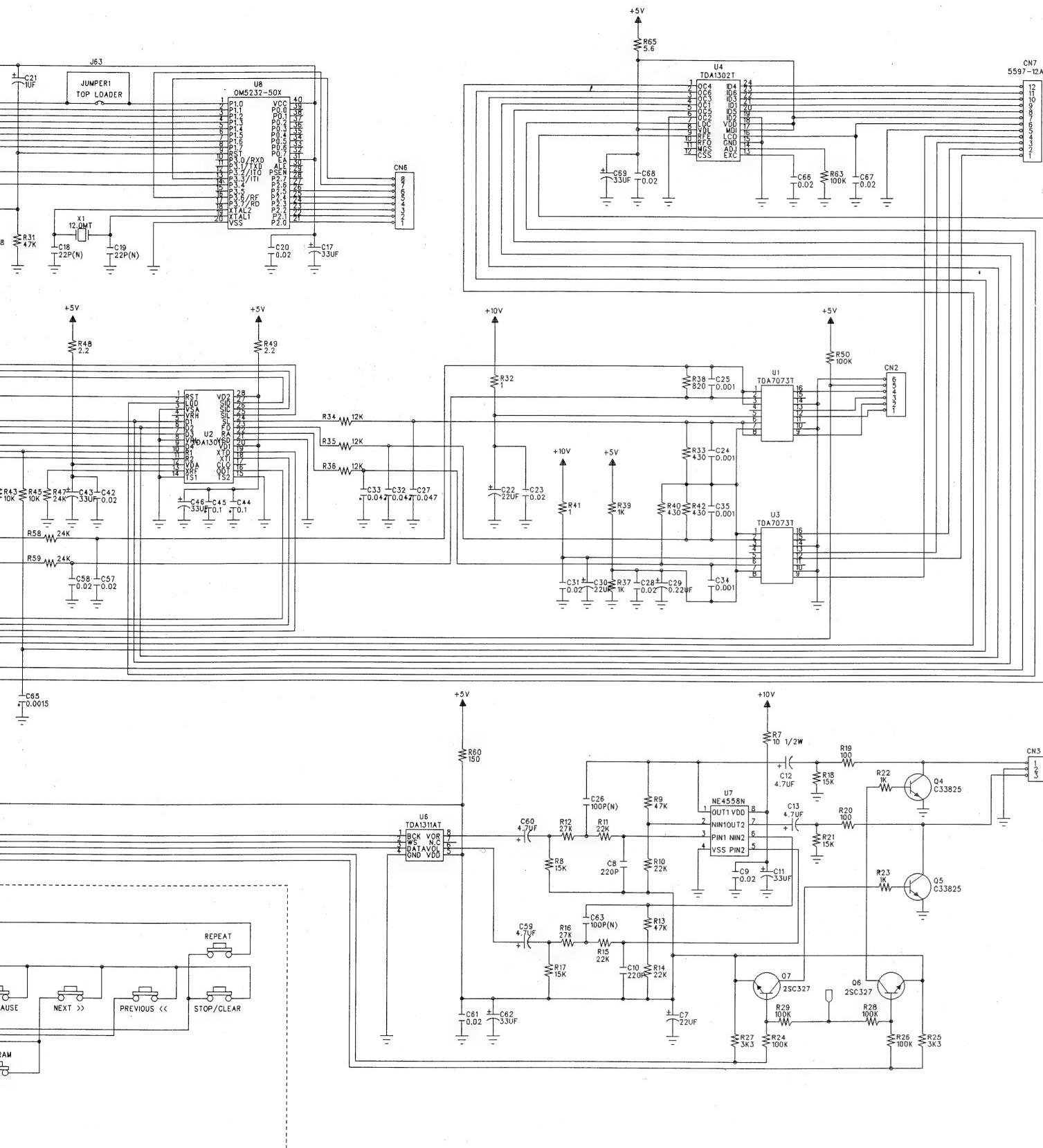
IC201 BA3313L		
PIN	PLAY	REC
1	3.26	2.98
2	0	0.79
3	0.6	0.61
4	NIL	NIL
5	0	0
6	GND	GND
7	GND	GND
8	7.43	6.89
9	0	0
10	7.35	6.82
11	0.6	0.61
12	3.26	2.98

	B	C	E
Q201	0.74	1.86	0.1
Q301	1.2m	GND	0.4m
Q302	1.2m	GND	0.4m
Q303	13.25	8.71	8.08
Q401	0.8m	1m	0.7m
Q501	0.45	0.7m	0.7m

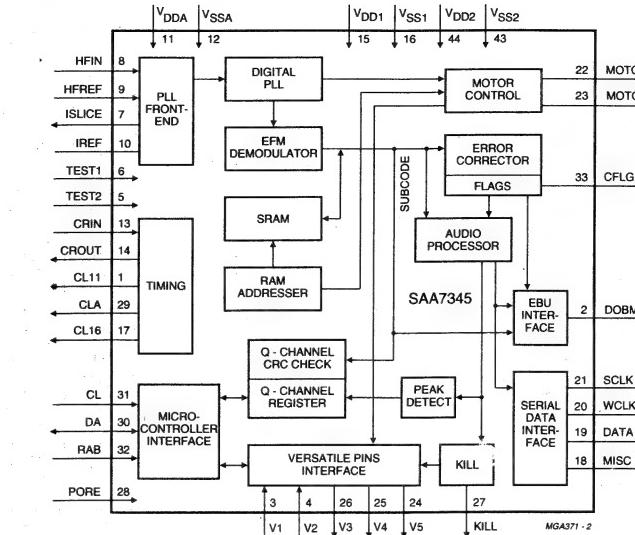
CD - CIRCUIT DIAGRAM

SAA7345





SAA7345



TDA1311AT

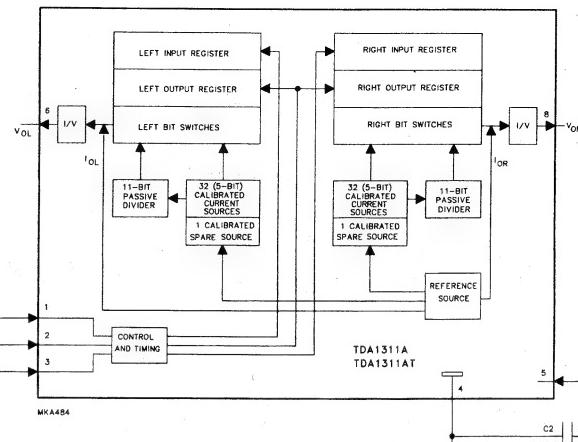
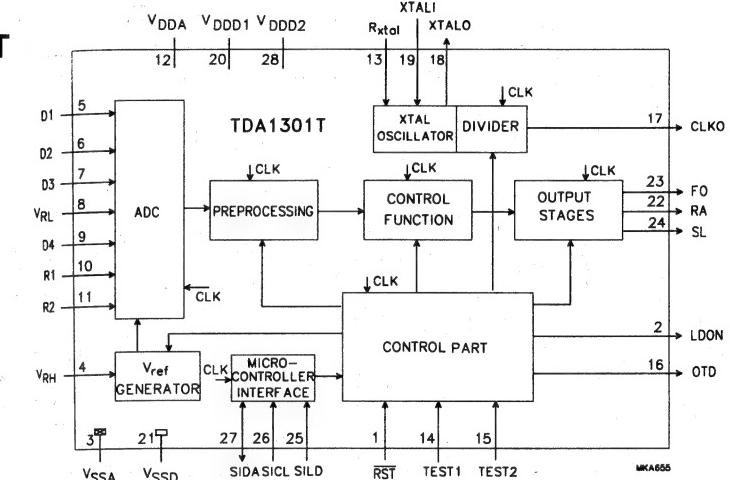
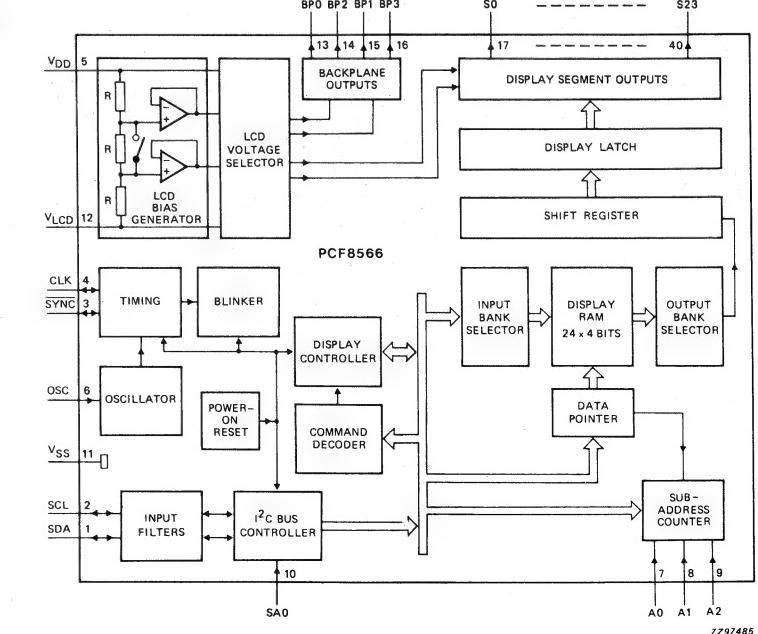


Fig.1 Block diagram.

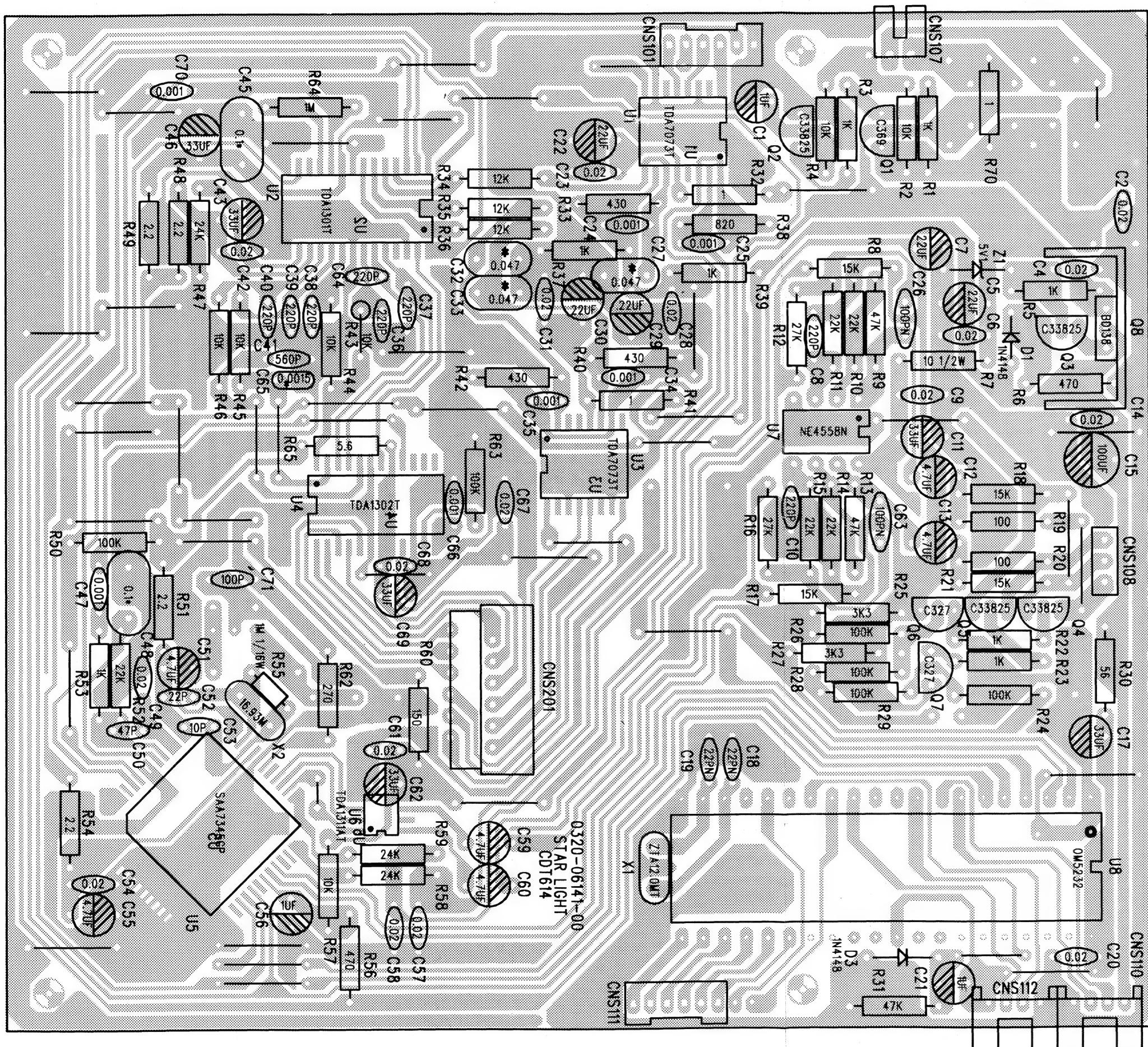
TDA1301T



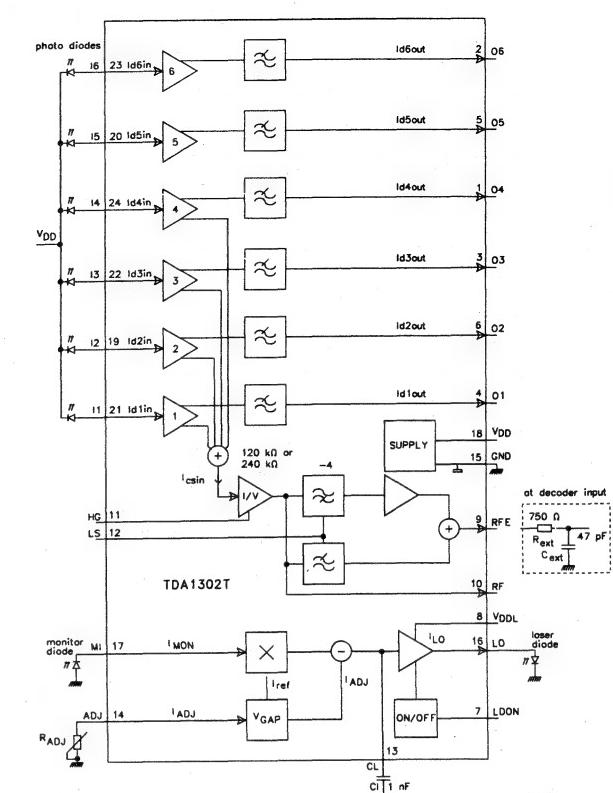
PCF8566



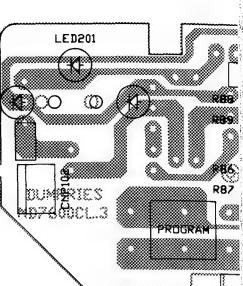
CD - LAYOUT DIAGRAM



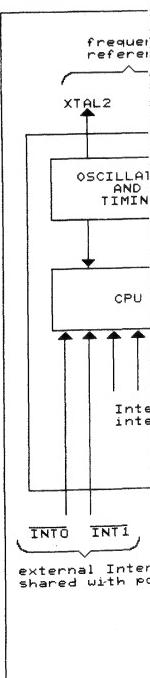
TDA1302T



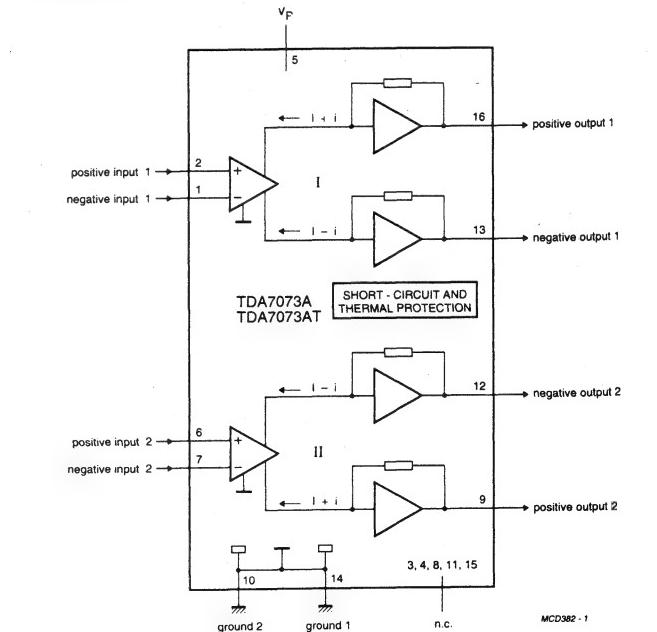
CD - CONTROL



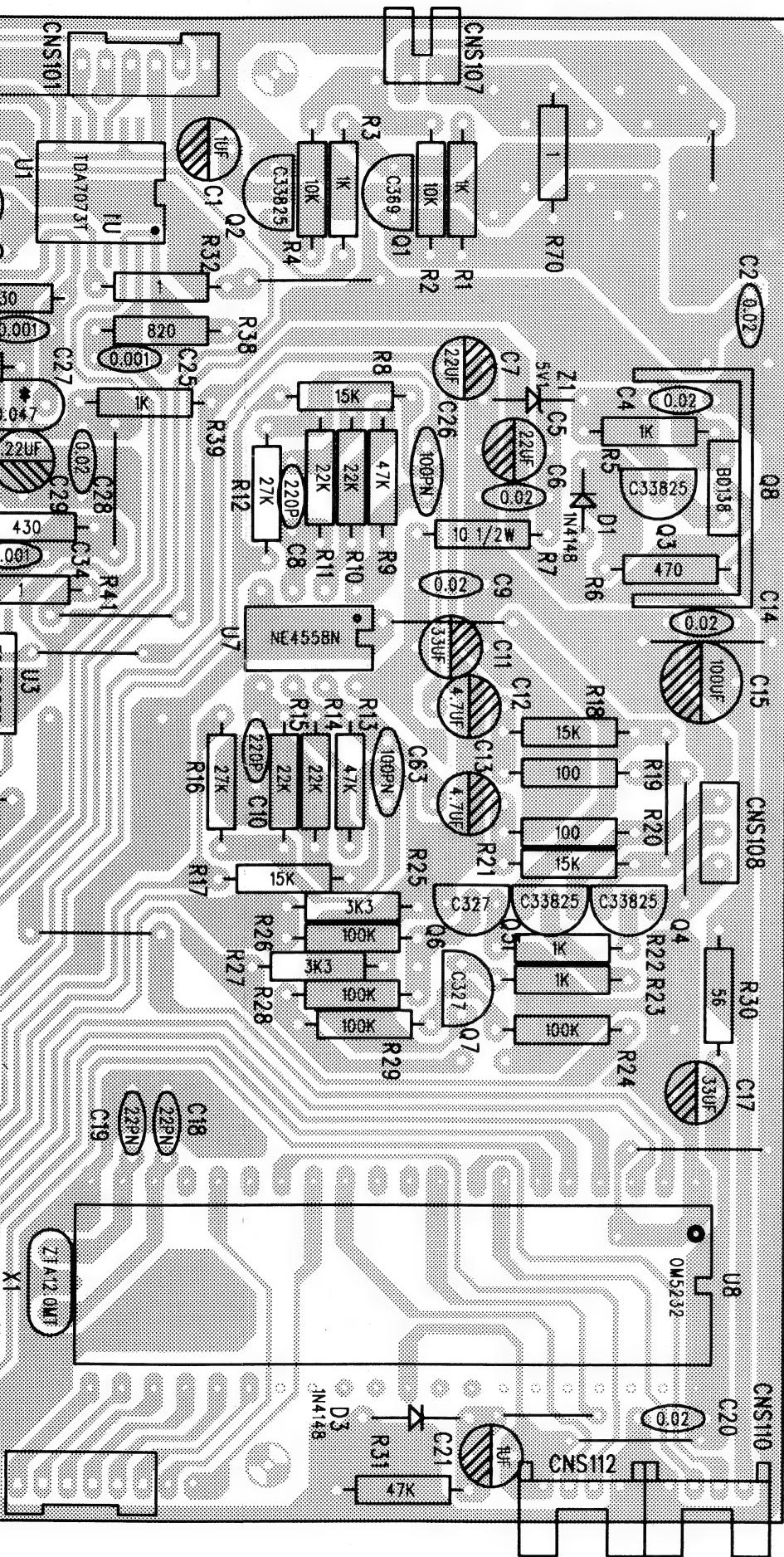
OM5232



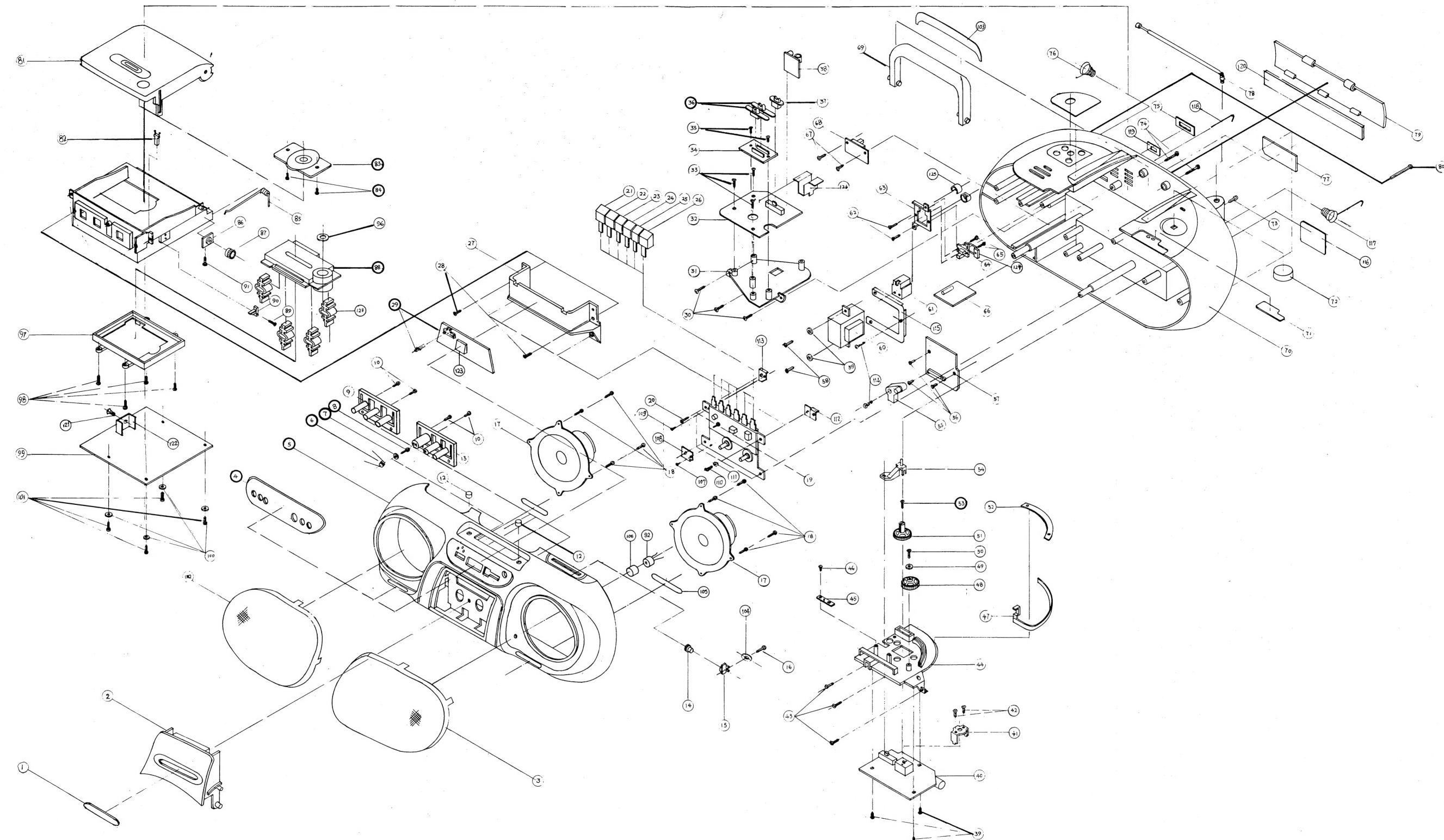
TDA7073T



TDA1302T



EXPLODED VIEW DIAGRAM - CABINET



MECHANICAL PARTSLIST - CABINET

1	4822 450 62495	Cass. Door Lens	71	4822 450 62523	Dial Lens (AZ8049 -/00)
2	4822 443 64542	Cass. Door	71	4822 450 62526	Dial Lens (AZ8049 -/17)
3	4822 458 30701	Speaker Grille (R)	71	4822 450 62496	Dial Lens (ND6600/RD6060)
4	4822 450 62518	Display Lens (AZ8049 -/00)	72	4822 413 51514	Tuning Knob
4	4822 450 62492	Display Lens (AZ8049 -/17)	76	4822 290 81619	Batt. Contact (-ve)
4	4822 450 62492	Display Lens (ND6600 -/46)	78	4822 303 30448	Swivel Rod Antenna
4	4822 450 62487	Display Lens (ND6600 -/48)	79	4822 423 41286	Battery Door
4	4822 450 62489	Display Lens (RD6060 -/43)	81	4822 444 61075	CD Cover
4	4822 450 62493	Display Lens (RD6060 -/58)	82	4822 276 13594	Catch Switch
5	4822 423 51207	Front Cabinet	85	4822 492 52433	CD Door Spring
6	4822 492 42765	Cass. Door Spring	86	4822 256 92292	Gear Holder (A)
9	4822 410 63851	CD Knob (L)	87	4822 522 33555	Gear (A)
13	4822 410 63849	CD Knob (R)	88	4822 691 30278	CD Mech CDM12.1
14	4822 522 33556	Gear (B)	102	4822 458 30702	Speaker Grille (L)
15	4822 256 92293	Gear Holder (B)	117	4822 290 81621	Batt. Contact (+/-ve)
19	4822 691 21019	Cass. Deck TK20FX-V613	118	4822 290 81703	Batt. Contact (+ve)
21	4822 410 63848	Cass. Knob (L)	124	4822 402 61412	Magnet Clamper Assy
22	4822 410 63846	Cass. Knob		4822 410 63702	Auto Reverse Knob
23	4822 410 63846	Cass. Knob		4822 450 62494	CD Door Lens
24	4822 410 63846	Cass. Knob		4822 462 42223	Sponge Foot (AZ8049)
25	4822 410 63846	Cass. Knob		4822 462 42168	Rubber Foot (ND6600/RD6060)
26	4822 410 63847	Cass. Knob (R)		4822 325 50215	Suspension Grommet
31	4822 402 61561	Display Bracket		4822 736 22535	Instr. Booklet (AZ8049 -/00)
36	4822 411 62038	Slide Volume Knob		4822 736 22536	Instr. Booklet (AZ8049 -/17)
37	4822 413 51516	Function Switch Knob		4822 736 22489	Instr. Booklet (ND6600/RD6060)
47	4822 450 81231	Dial Pointer			
48	4822 522 33554	Dial Drum Gear			
51	4822 522 33553	Tuning Gear			
54	4822 413 51515	Band Switch Knob			
69	4822 498 10533	Handle			

Note : Only those parts mentioned in the list are normal service parts.

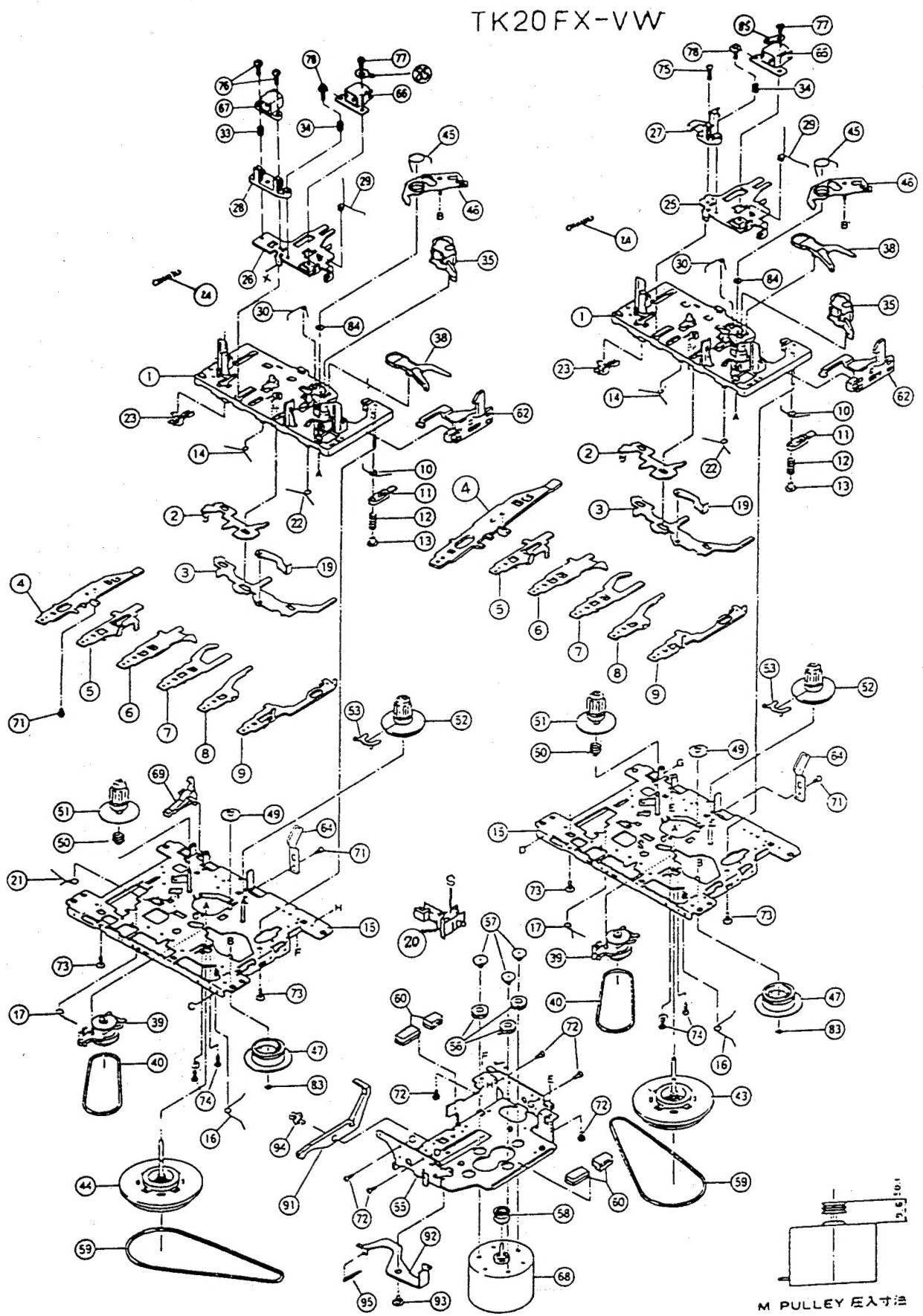
MECHANICAL PARTSLIST - TAPE DECK

32	4822 403 20244	Roller Arm Assy
41	4822 358 31331	F. Belt
55	4822 358 31329	Main Belt
58	4822 403 71221	Eject Slider
62	4822 249 10511	R/P Head
63	4822 249 40324	E Head
64	4822 361 21656	Motor

Note : Only those parts mentioned in the list are normal service parts.

EXPLODED VIEW DIAGRAM - TAPE DECK

TK20FX-VW



M PULLEY 壓入寸法

ELECTRICAL PARTSLIST

	R70 RV101 VR301 VR302	4822 052 11108 4822 101 11292 4822 105 11133 4822 105 11134	Fusible Rst 1R 0.5W Semi-Fixed Res 50K Slide VR A20K Slider VR A50K
	Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q201 Q301 Q302 Q303 Q401 Q501 U1 U2 U3 U4 U5 U6 U7 U8 U9 IC101 IC201 IC301	5322 130 44593 4822 130 40958 4822 130 40958 4822 130 40958 4822 130 40958 4822 130 41246 4822 130 41246 4822 130 40824 4822 130 63773 4822 130 63773 4822 130 63773 4822 130 63664 4822 130 60258 4822 130 63773 5322 209 32077 4822 209 32763 5322 209 32077 4822 209 33992 4822 209 33339 4822 209 33993 4822 209 32659 4822 209 90214 4822 209 72893 4822 209 32746 4822 209 33988 4822 209 31544	Trans. BC369 Trans. BC338-25 Trans. BC338-25 Trans. BC338-25 Trans. BC338-25 Trans. BC327-25 Trans. BC327-25 Trans. BD138 Trans. KTC3198-GR Trans. KTC3198-GR Trans. KTC3198-GR Trans. 8050C Trans. 2SC2001K Trans. KTC3198-GR IC TDA7073AT IC TDA1301T IC TDA7073AT IC TDA1302T IC SAA7345GP/M5 IC TDA1311AT IC BA4558 IC OM5232/FBP/518 IC PCF8566T IC TEA5711T IC BA3313L IC TA8227P
	D1 D3 D101 D102 D301 D302 D303 D304 D306 D307	4822 130 30621 4822 130 30621 4822 130 30621 4822 130 30621 5322 130 34574 5322 130 34574 5322 130 34574 5322 130 34574 4822 130 30621 4822 130 30621	Diode 1N4148 Diode 1N4148 Diode 1N4148 Diode 1N4148 Diode 1N4004 Diode 1N4004 Diode 1N4004 Diode 1N4004 Diode 1N4148 Diode 1N4148
	Z1 Z301	4822 130 34233 4822 130 83469	Zener 5.1V 1/2W Zener 8.2V 1/2W
	LED1 LED201	4822 130 83467 4822 130 83466	LED 3MM Green LED 3MM Red
	X1 X2 L101 L103 L401 T101 T102 T103 CF101 CF102 CF103 CF104 PVC	4822 242 81991 4822 242 81992 4822 157 71566 4822 157 71567 4822 157 70806 4822 157 71595 4822 157 71596 4822 157 71597 4822 157 71571 4822 157 71569 4822 157 71569 4822 157 71568 4822 157 71572	Reson. FCR12.0M2S Reson. FCR16.93M2G AM Ant Coil FM Coil 2.5T Coil 560μH 3A396N IFT-AM Yel IFT-AM Whi AM Osc Coil Red BPF A-258A PI-03-014 FM CF FFE1070MS13 FM CF FFE1070MS13 FM CF FCD1070MB13U PVC FAT-16B2C (R)
- MISCELLANEOUS -			
	SW101 SW201 SW202 B-CUT CD Sw	4822 277 21784 4822 276 13442 4822 277 21782 4822 277 21783 4822 276 13443 4822 278 90739 4822 130 91472 4822 158 60645 4822 242 30282 4822 240 30747	Slide Switch 4P3T Push Switch 9P2T Slide Switch Slide Switch 2P2T Tact Switch Quick Sw. LS-323-0 LCD Display TCM-498 Ferrrite Bar D10X80 Cond Mic WM-54BY Speaker 4" 6 OHM
	4822 267 31889 4822 267 31891 4822 265 20644 4822 146 31467 4822 146 21805 4822 070 31602	3.5 Earphone Jack AC Socket (for -/00) AC Socket UL (for -/17) Transf. 230V (for -/00) Transf. 120V UL (for -/17) Fuse T1.6A/250V 5X20	

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